SCIA ENGINEER – ADVANCED TRAINING STEEL: SECTION AND STABILITY CHECK, FIRE RESISTANCE, CONNECTIONS (2 DAYS)

Description

This two-day course focuses on the advanced principles of the **steel calculations according to Eurocode 3** (EN1993). We examine the applications for frame structures and **steel connections** between the elements on the basis of **practical examples**. The training is geared to **advanced users**.

The participants will gain understanding and answers for:

- interpretation and use of materials and cross-section classifications
- a summary of the performed code checks
- background and application of 2nd order calculations
- importance of the general buckling mode (stability)
- influence of the temperature for the steel properties
- modeling and checking steel connections

What knowledge will you obtain?

Our Customer Service Engineer will provide step by step explanation, so that the participants can perform and verify the steel design in a fast and accurate way, according to the design code. Delivering results of the acquired knowledge include:

- understand how to link the theoretical requirements of the Eurocode with the practical use of the steel modules in SCIA Engineer
- know when and how to perform advanced calculations (general buckling and 2nd order)
- modeling steel connections correctly and efficiently and interpreting the results in the correct way

Program

Materials
- explanation of the material properties of Eurocode 3

Cross-section types and classifications
- explanation of the different types of cross-sections in SCIA Engineer
- principle of the section classification according to Eurocode 3

Cross-section check
- overview of the different section checks (compression, moment, torsion, shear force, …)

- overview of the stability checks (flexural buckling, lateral torsional buckling, shear buckling, torsion, …)
- automatic profile optimization

Fire resistance check
- use and creation of temperature-time curves
- characteristics and use of fire-resistant materials
- explanation of the various control methods

Steel frame connections
- enter and modify bolted and welded steel connections (rigid, hinged) in the strong and weak axis
- determining the rotational stiffness and ductility
- interpretation and application of the checking of different failures mechanisms

Stability calculation (general buckling)
- determining the critical load coefficients
- calculation of the different global buckling modes
- visualization and interpretation of results
- use of these results in the 2nd order analysis

2nd order analysis
- general principles of a 2nd order analysis in SCIA Engineer
- explanation of the introduction of global and local imperfections
- viewing and interpretation of the results
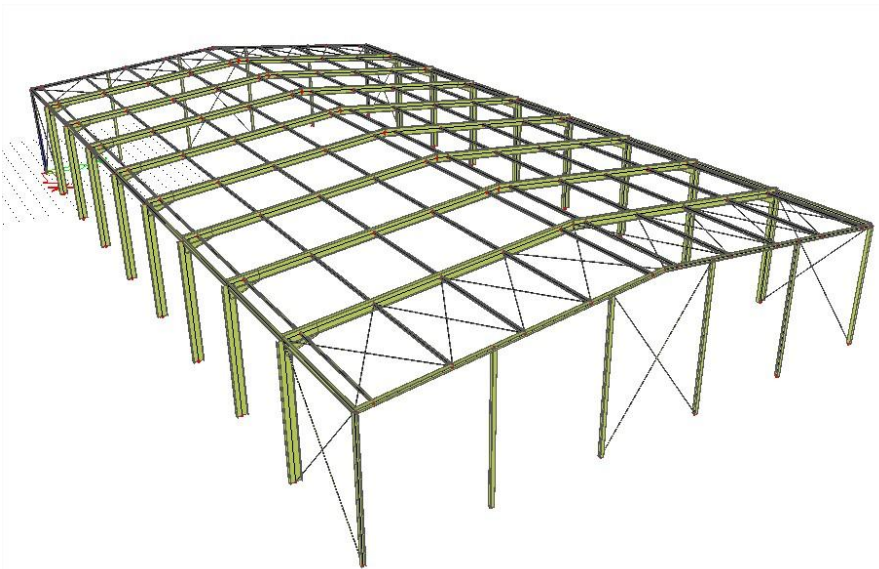
Working method

The training is provided by an experienced engineer from the Customer Service Department of SCIA. To guarantee the interaction between the participants and the trainer, the course is given for a small group of up to 8 people.

Each **participant will use the software** and will put the different topics of the course immediately into practice, under the supervision of the trainer. At the end of the training you will have the necessary knowledge to **use the parts discussed in an autonomous and efficient way**.

At the beginning of the training, each participant will receive a **syllabus**. This includes a detailed explanation of the different functionalities and treated examples.

After the training, the companies who do not have the ability to use all the features discussed in the license of the software, will have the opportunity to request a free try-out license which is valid for 30 days.

Prerequisites

This course is intended for more experienced users with the necessary general knowledge of structural design.

Certificate

Each participant will receive an official SCIA Engineer "Advanced training - Steel" certificate at the end of the training, signed by the trainer.
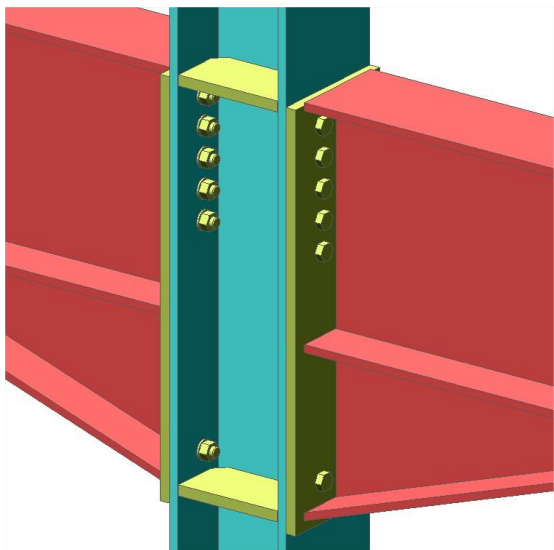
Disclaimer: The content of the training may be modified without notification (11/2015).